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EXAMINER

LE, MIRANDA

ART UNIT PAPER NUMBER

2167

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/871,476

Applicant(s)

MUKKAMALLA ET AL.

Examiner

Miranda Le

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

1. This communication is responsive to Amendment, filed 04/04/2005.
2. Claims 1-26 are pending in this application. Claims 1, 13 are independent claims. In the Amendment, no claims have been amended, added, or canceled. This action is made Final.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-5, 10-17, 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamer et al. (US Patent No. 6,035,412), in view of Wong et al. (US Patent No. 5,890,169).

As to claims 1, 13, Tamer teaches a method for database systems to access data from other database systems (col. 2, lines 13-43), the method comprising the steps of:

a first database (i.e. a first data storage system) system directly storing first database records in first data blocks (i.e. first set of volume) having a first data block size (i.e. set of tracks) at col. 2, lines 11-43, col. 3, lines 5-23;

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concurrently with said first database system directly storing first database records in first data blocks having a first data block size (i.e. writes its data to the first set of devices, col. 5, lines 29-49), said first database system directly accessing a copy of second data blocks in which a second database system directly stored second database records (i.e. the data storage system generates a minor copy of that data in the second set of volumes, col. 5, lines 29-49);

wherein each block of said first data blocks and of said second data blocks is an atomic unit of storage space allocated within a file to store one or more records of a database (i.e. a track of the disk stores a record or bucket, col. 11, line 59 to col. 12, line 27, col. 7, line 42 to col. 8, line 12. It should be noted that a data block in the set of data blocks could be understood as an atomic unit of storage space allocated (i.e. track number) within a file to store one or more records (i.e. a record for each track, col. 8, line 3) of a database);

said second data blocks (i.e. second set of storage volumes) having at least one data block with a second data block size (i.e. set of tracks) different than said first data block size (col. 3, lines 5-23).

Although Tamer does not explicitly teach the two block sizes are different, Wong teaches this limitation at col. 7, lines 24-35.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of the cited references because Wong's suggestion of creating a file allocation table file system with different block sizes (col. 7, lines 24-35) would have allowed users of Tamer's to have efficient usage of storage space because large block size would maximize I/O performance while small block size would increase the number of available block

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sizes, thereby a disk fragmentation could be reduce and maximal storage usage could be achieved (col. 7, lines 16-21).

**As to claims 2, 14,** Tamer teaches the method further includes the step of integrating said copy of said second data blocks within said first database system as a tablespace that includes said copy of said second data blocks at col. 11, line 59 to col. 12, line 24.

**As to claims 3, 15,** Tamer teaches the step of accessing a copy of second data blocks includes storing user data in said copy of said second data blocks at col. 12, line 29 to col. 13, line 37.

**As to claims 4, 16,** Tamer teaches the method further includes the step of detaching one or more tablespaces from said second database system, wherein said one or more tablespaces include said second data blocks at col. 11, line 59 to col. 12, line 24.

**As to claims 5, 17,** Tamer teaches each data block of said copy of said second data blocks has said second data block size at col. 3, lines 5-23.

**As to claims 10, 22,** Tamer teaches first data files contain said first data blocks and second data files contain said second data blocks; and wherein the method further includes the step of generating a mapping: between said first data files and said first data block size, and between said second data files and said second data block size at col. 7, line 41 to col. 8, line 67.

**As to claims 11, 23,** Tamer teaches a first tablespace contains said first data blocks and a second tablespace contains said second data blocks at col. 12, line 50 to col. 13, line 27; and wherein the method further includes the step of generating a mapping: between said first tablespace and said first data block size, and between said second tablespace and said second data block size at col. 7, line 41 to col. 8, line 67.

**As to claims 12, 24,** Tamer teaches said first database system includes a buffer cache in which said first database system stores data blocks of multiple sizes; and wherein said method further includes the step of storing said first data blocks and said second data blocks in said buffer cache at col. 6, lines 17-65.

5. Claims 6-7, 18-19, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamer et al. (US Patent No. 6,035,412), in view of Wong et al. (US Patent No. 5,890,169), and further in view of Wong et al. (US Patent No. 5,819,298).

**As to claims 6, 18,** Tamer, Wong ('169) do not expressly teach the step of generating metadata that specifies a plurality of block sizes for data blocks directly accessible to said first database system. However, Wong ('298) teaches this limitation at col. 14, lines 48-65.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of the cited references because Wong ('298)'s suggestion of generating metadata that specifies a plurality of block sizes for data blocks directly accessible to said first database system (col. 14, lines 48-65) would have allowed users of Tamer's to more easily

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identify the status of all the data block sizes, thereby the allocation of blocks of a disk could be managed efficiently.

As to claims 7, 19, Wong ('298) teaches said metadata defines tablespaces and specifies for each tablespace of said tablespaces a particular data block size for all data blocks in said tablespace at col. 14, lines 48-65;

the method further includes the step of integrating said copy of said second data blocks within said first database system as at least one tablespace that includes said copy of said second data blocks at col. 13, line 19 to col. 14, line 65,

wherein the step of integrating includes modifying said metadata to reflect said second data block size for said at least one tablespace at col. 13, line 19 to col. 14, line 65.

As to claims 25, 26, Tamer teaches a first tablespace includes said first data blocks at col. 7, line 8 to col. 8, line 67;

a second tablespace includes said second data blocks at col. 7, line 8 to col. 8, line 67.

Tamer, Wong ('169) do not specifically teach the method further includes the step of generating metadata that defines the first data block size as a size of data blocks in said first tablespace and defines the second block size as a size of data blocks in said second tablespace"

However, Wong ('298) teaches this limitation at col. 14, lines 48-65.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of the cited references because Wong ('298)'s suggestion of generating metadata that defines the first data block size as a size of data blocks in said first tablespace and defines the second block size as a size of data blocks in said second tablespace (col. 14, lines 48-

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65) would have allowed users of Tamer's to more easily identify the status of all the data block sizes, thereby the allocation of blocks of a disk could be managed efficiently.

6. Claims 8-9, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamer et al. (US Patent No. 5,970,502), in view of Wong et al. (US Patent No. 5,890,169), and further in view of Mukhopadhyay et al. (US Patent No. 6,032,158).

As to claims 8, 20, Tamer, Wong ('169) do not explicitly teach said first database system is a data warehouse and said second database system is a source database system for said data warehouse. However, Mukhopadhyay teaches this limitation at col. 3, lines 34-59, col. 4, lines 13-38.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of the cited references because Mukhopadhyay's suggestion of including said first database system is a data warehouse and said second database system is a source database system for said data warehouse would have allowed users of Tamer's to efficiently capture and propagate changes made upon the source table of an operational database to one or more target tables of data marts (i.e. data warehouses), whereby the impact to the operational database is minimized.

As to claims 9, 21, Mukhopadhyay teaches the step of integrating said copy of said second data blocks within said data warehouse as a tablespace that includes said copy of said second data blocks at col. 3, lines 34-59, col. 4, lines 13-38.



*Response to arguments*

7. Applicant's arguments filed 03/10/2003 have been fully considered but they are not persuasive.

Applicant argues that:

(a) Neither Tamer or Wong teach or suggest in any way that data blocks are an “atomic unit of storage space allocated within a file to store one or more records of a database”.

(b) Tamer may not be combined with Wong.

The examiner respectfully disagrees for the following reasons:

Per (a), The Examiner has thoroughly reviewed Applicants' arguments but firmly believes that the cited reference reasonably and properly meet the claimed limitation. Applicants are reminded that the Examiner is entitled to give the broadest reasonable interpretation to the language of the claimed as explained below.

Tamer discloses a system comprising a master unit stores a primary database (i.e. a first database, col. 4, lines 28-32) and a slave unit stores a copy from which backups to more permanent data storage are made (i.e. second database, col. 4, lines 28-32).

Tamer also teaches “Each of the volumes of the first and second sets of volumes is made up of a corresponding set of tracks” (col. 3, lines 13-18).

It is noted that the first and second set of volumes correspond to the first and second database records, and the set of tracks correspond to the set of data blocks, and wherein a data block in the set of data blocks could be understood as an atomic unit of storage space allocated (i.e. track number) within a file to store one or more records (i.e. a record for each track, col. 8, line 3, col. 8, lines 42-44) of a database.

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It is thus clearly shown that Tamer does teach a data blocks as an “atomic unit of storage space allocated within a file to store one or more records of a database”.

Per (b), applicant seems to be suggesting that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, since both references direct to a system for storing data relating to file allocation, the combination, to employ creating a file allocation table file system with different block sizes (col. 7, lines 24-35), as taught by Wong in the system of Tamer in order to have efficient usage of storage space because large block size would maximize I/O performance while small block size would increase the number of available block sizes, thereby a disk fragmentation could be reduce and maximal storage usage could be achieved (col. 7, lines 16-21), is reasonably to establish a prima facie case of obviousness.

Applicant has made piecemeal analysis of references, applicant is reminded that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). As pointed out by the examiner, only the teaching of creating a file allocation table file system with different block

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sizes being taught by Wong is used in combining with the system of Tamer to render obvious the claimed limitations.

Accordingly, the claimed invention as represented in the claims does not represent a patentable over the art of record.

### *Conclusion*

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (571) 272-4107. The fax number to this Art Unit is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le  
June 24, 2005



GRETIA ROBINSON  
PRIMARY EXAMINER